



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/859,542	05/18/2001	Shiuh-Bin Kao	KAOS3005/EM/6793	3481

23364 7590 09/11/2003
BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314

EXAMINER	
YENKE, BRIAN P	
ART UNIT	PAPER NUMBER

2614
DATE MAILED: 09/11/2003 2

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/859,542	KAO ET AL.
	Examiner BRIAN P. YENKE	Art Unit 2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
 - 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-7 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 18 May 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) Interview Summary (PTO-413) Paper No(s) ____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitations specifically with respect to claim 1, to include a) performing a gamma compensation process...; b) dividing said video signal... and c) performing a variety of anti compensation process... must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. The examiner requests the applicant to provide a functional flow chart/diagram and any necessary blocks/elements that are used in carrying out the invention as claimed.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 1 objected to because of the following informalities:

Claim 1 (preamble) states; A process...anti compensation processes on input image....

Claim 1 (preamble) should state; A process...anti compensation processes on an input image...

Claim 1, line 8 states "in respective segment" it should state "in each respective segment".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-3 and 5-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "low gray level" in claims 2 and 5 is a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "high gray level" in claims 3 and 7 is a relative term which renders the claim indefinite. The term "high" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The term "intermediate gray level" in claim 6 is a relative term which renders the claim indefinite. The term "intermediate" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

The above terms, low, high and intermediate gray level have been interpreted by the examiner as levels which are lower, higher or the same (intermediate) level as that of the received compensated signal.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Matono et al., US 6,344,857.

In considering claim 1,

a) the claimed performing a gamma compensation process on a video signal received by said PDP with respect to a first gamma is met where the received video television is gamma corrected to correct the gamma characteristic of the image transmitting side (col 1, line 24-27).

b) the claimed dividing said video signal into at least two segments based on a gray level thereof is met by gamma correction unit 1 which divides the received video signal into 8 segments comprised of two nodes (Fig 2) based in the brightness/gray level of the video signal (col 3, line 25-64).

c) the claimed performing a variety of anti compensation process on said video signal in each respective segment is met where the gamma correction unit performs a variety of gamma correction based on the particular segment of the divided video signal (Fig 2), where based upon the linear gamma curve (dashed line Fig 2), the respective colors red, green and blue, are adjusted where each segment includes a start point (low level) and an end point (high level), where the signal (color) is adjusted from the start point to the end point.

In considering claim 2,

The claimed wherein in said step c) a second gamma smaller than said first gamma is used in said anti compensation process with respect to said video signal in a range of low gray level for increasing said grey level in said range of low gray level is met where the blue color, in the first seven segments is gamma corrected using a gamma value lower than the gamma curve (dashed line) which increases the gray level in each of the blue segments (Fig 2).

In considering claim 3,

The claimed wherein said step c) a third gamma larger than said first gamma is used in said anti compensation process with respect to said video signal in a range of high gray level for increasing a gradient in said range of high gray level, thereby obtaining a sharp contrast of said image is met where the red (1st seven segments) and green (1st seven segments) which are above the gamma curve, utilize a higher gamma value (correction) and are increased between each segment (Fig 2).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matono et al., US 6,344,857 in view of applicant's admitted prior art (AAIPA).

In considering claim 4,

Matono does not specifically disclose the brightness equation as claimed; wherein said gamma compensation process has been performed on said video signal received by said PDP in a following equation: brightness = $k1 \times (V_{input}/V_{max})^{\gamma}$, where $\gamma = 2.2$, $k1$ is a variable representing a gray level of a color television (TV), V_{input} is input voltage, and V_{max} is a maximum voltage for showing said maximum gray level of said color TV.

Matono does disclose that it is conventional that a received video signal must be gamma corrected to cancel the gamma characteristic for the image transmitting side. It is also noted by the examiner that conventionally received NTSC signal include gamma characteristics of 2.2, whereas in European countries the image transmitting side include gamma characteristics of 2.8. Thus the use of 2.2 is conventionally used in the US in transmitting an NTSC signal, as also noted by the applicant.

Thus the examiner incorporates the applicant's admitted prior art, (page 1, line 16) which discloses the conventional brightness equation which is used to perform gamma correction on a video signal on the transmission side.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify/utilize in Matono, which discloses receiving a conventionally gamma corrected video signal in order to perform further compensation/gamma correction on the video signal to cancel/account for the gamma characteristic of the image transmitting side in addition to correcting for the characteristic of the type of display (LCD, PDP or DMD), by using the conventional brightness equation where $\gamma = 2.2$ to cancel the effect of the conventional gamma characteristic on the image transmitting side.

In considering claim 5,

The claimed wherein a fourth gamma smaller than 2.2 is used in said anti compensation process with respect to said video signal in said range of low gray level is met where the blue segment has been gamma corrected using a gamma value smaller than the received signal, where the blue segment (segments 1-7) include multiple gamma values/slopes smaller than the received gamma compensated value (dashed line).

In considering claim 6,

The claimed wherein a fifth gamma equal to 2.2 is used in said anti compensation process with respect to said video signal in said range of intermediate gray level is met where the green segment (node 7-8) is gamma corrected utilizing a gamma value/slope

as that of the received compensated signal (dashed line), the being corrected to a gamma equal to 2.2.

In considering claim 7,

The claimed wherein a sixth gamma larger than 2.2 is used in said anti compensation process with respect to said video signal in said range of high gray level is met where the red and green segments (both 1st seven segments) as shown in Fig 2 show multiple gamma values larger than the received gamma compensated value (dashed line).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamamoto et al., US 6,034,656 discloses a plasma display panel and method of controlling brightness of the panel where the video signal received is divided into two segments and gamma corrected according to the region.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Yenke whose telephone number is (703) 305-9871. The examiner work schedule is Monday-Thursday, 0730-1830 hrs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, John W. Miller, can be reached at (703)305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703)305-4700.


BRIAN P. YENKE
Patent Examiner
Art Unit 2614


B.P.Y

September 5, 2003